

AMENDMENTS TO THE CLAIMS

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Withdrawn) A method of making a polysaccharide over-producing bacterium comprising

introducing into a bacterium an *ica* nucleic acid operably linked to an *ica* regulatory nucleic acid,

wherein the *ica* regulatory nucleic acid comprises

(a) nucleic acid molecules which hybridize under stringent conditions to a nucleic acid molecule having a sequence of SEQ ID NO:2, have an addition, deletion or substitution in a region between and including nucleotides 9 and 43 of SEQ ID NO:2, and that enhance production of a polysaccharide from an *ica* locus, and

(b) complements thereof.

2-9. (Cancelled)

10. (Withdrawn) A method of making a polysaccharide over-producing bacterium comprising

introducing into a bacterium an *ica* nucleic acid operably linked to an *ica* regulatory nucleic acid, wherein the *ica* regulatory nucleic acid comprises a mutant *icaR* nucleic acid, and

measuring polysaccharide production from the bacterium, wherein a high level of polysaccharide production is indicative of a polysaccharide over-producing bacterium.

11-33. (Cancelled)

34. (Withdrawn) A recombinant polysaccharide over-producing bacterium comprising an *ica* nucleic acid operably linked to an *ica* regulatory nucleic acid,

wherein the *ica* regulatory nucleic acid comprises

(a) nucleic acid molecules which hybridize under stringent conditions to a nucleic acid molecule having a sequence of SEQ ID NO:2, have an addition, deletion or substitution in a region between and including nucleotides 9 and 43 of SEQ ID NO:2, and that enhance production of a polysaccharide from an *ica* locus, and

(b) complements thereof.

wherein the bacterium is not MN8m.

35-41. (Cancelled)

42. (Withdrawn) A recombinant polysaccharide over-producing bacterium comprising a mutant *icaR* nucleic acid.

43-48. (Cancelled)

49. (Withdrawn) A method of producing a bacterial polysaccharide comprising culturing the polysaccharide over-producing bacterium of claim 34 in a growth medium, and
harvesting the bacterial polysaccharide from the culture.

50-52. (Cancelled)

53. (Withdrawn) A method of producing an antibody to a bacterial polysaccharide comprising
isolating a bacterial polysaccharide from the polysaccharide over-producing bacterium of claim 34,
administering to a subject the isolated bacterial polysaccharide in an amount effective to produce an antibody, and
harvesting antibody from the subject.

54-62. (Cancelled)

63. (Currently Amended) An isolated nucleic acid molecule, ~~comprising~~ selected from the group consisting of

(a) a nucleic acid molecule which hybridizes under stringent conditions at 65°C in hybridization buffer, washing at room temperature with 0.15M sodium chloride, 0.015M sodium citrate, pH 7 (SSC) and at 68°C with 0.1-0.5 x SSC, 0.1 sodium dodecyl sulphate to a nucleic acid molecule having a sequence of SEQ ID NO:2, spans a region corresponding to nucleotides 23 and 29 of SEQ ID NO:2, has an addition, deletion or substitution of at least two nucleotides in a region corresponding to between and including nucleotides 24 and 28 of SEQ ID NO:2, is at least 48 nucleotides in length, and enhances production of poly-N-acetyl glucosamine when operably linked to an *ica* nucleic acid comprising nucleotides 2330-5745 of SEQ ID NO:3 (~~GenBank Accession No. AF086783~~) that encode IcaA, IcaD, IcaB and IcaC, relative to the level of poly-N-acetyl glucosamine produced when SEQ ID NO:2 is operably linked to the *ica* nucleic acid, or

(b) a complement thereof.

64-68. (Cancelled)

69. (Previously Presented) An expression vector comprising the isolated nucleic acid molecule of claim 63, operably linked to an *ica* nucleic acid.

70. (Original) A host cell transformed or transfected with the expression vector of claim 69.

71. (Currently Amended) An isolated nucleic acid molecule selected from the group consisting of

(a) a fragment of a nucleic acid molecule ~~having~~ consisting of a sequence of SEQ ID NO:1, and

(b) complements of (a),

wherein the fragment spans nucleotides 23 and 24 of SEQ ID NO:1, is at least 48 nucleotides in length, and enhances production of poly-N-acetyl glucosamine when operably linked to an *ica* nucleic acid comprising nucleotides 2330-5745 of SEQ ID NO:3 (~~GenBank Accession No. AF086783~~) that encode IcaA, IcaD, IcaB and IcaC, relative to the level of poly-N-acetyl glucosamine produced when SEQ ID NO:2 is operably linked to the *ica* nucleic acid .

72. (Cancelled)

73. (Withdrawn) A method for identifying an isolated binding agent, comprising contacting a first nucleic acid molecule having the sequence of SEQ ID NO:2 or a functionally equivalent fragment thereof with a candidate molecule and determining whether the candidate molecule binds to the first nucleic acid molecule, and

contacting a second nucleic acid molecule having the sequence of SEQ ID NO:1 or a functionally equivalent fragment thereof with the candidate molecule and determining whether the candidate molecule binds to the second nucleic acid molecule,

wherein a candidate molecule that binds to either the first or the second nucleic acid molecule but not both is indicative of an isolated binding agent.

74-83. (Cancelled)

84. (Withdrawn) A method of identifying an *ica* promoter sequence associated with polysaccharide overproduction comprising

detecting a nucleic acid molecule having a sequence alteration from wildtype in a region between and including nucleotides 9 and 43 of SEQ ID NO:2.

85-89. (Cancelled)

90. (Withdrawn) A method for identifying an *ica* regulatory nucleic acid molecule that enhances polysaccharide production comprising

altering a nucleic acid molecule having a sequence of SEQ ID NO:2, and

determining a level of reporter production by a bacterium that comprises the altered nucleic acid molecule operably linked to reporter nucleic acid,

wherein a higher than wildtype level of reporter protein production is indicative of an *ica* regulatory nucleic acid molecule that enhances polysaccharide production.

91-106. (Cancelled)

107. (Withdrawn) A method of over-producing a protein in a bacterium comprising introducing into a bacterium a nucleic acid operably linked to an *ica* regulatory nucleic acid,

wherein the *ica* regulatory nucleic acid comprises

(a) nucleic acid molecules which hybridize under stringent conditions to a nucleic acid molecule having a sequence of SEQ ID NO:2, have an addition, deletion or substitution in a region between and including nucleotides 9 and 43 of SEQ ID NO:2, and that enhance production of a polysaccharide from an *ica* locus, and

(b) complements thereof, and

wherein the nucleic acid encodes a protein to be over-produced.

108-115. (Cancelled)

116. (Withdrawn) A method of over-producing a protein in a bacterium comprising introducing into a bacterium a nucleic acid operably linked to an *ica* regulatory nucleic acid, wherein the *ica* regulatory nucleic acid comprises a mutant *icaR* nucleic acid, wherein the nucleic acid encodes a protein to be over-produced.

117-133. (Cancelled)

134. (Currently Amended) The isolated nucleic acid molecule of claim 63, wherein the isolated nucleic acid molecule ~~comprises~~ consists of a sequence of SEQ ID NO:1.

135. (Previously Presented) The isolated nucleic acid molecule of claim 63, wherein the isolated nucleic acid molecule comprises a nucleotide sequence between and including nucleotides 9 and 38 of SEQ ID NO:1.

136. (Previously Presented) The isolated nucleic acid molecule of claim 63, wherein the isolated nucleic acid molecule comprises a deletion, addition or substitution of at least three, at least four or at least five nucleotides in the region between and including nucleotides 24 and 28 of SEQ ID NO:2.

137. (Previously Presented) The isolated nucleic acid molecule of claim 63 , wherein the isolated nucleic acid molecule comprises a five nucleotide non-wildtype substitution between and including nucleotides 24 and 28 of SEQ ID NO:2.

138. (Previously Presented) The isolated nucleic acid molecule of claim 137 , wherein the five nucleotide non-wildtype substitution has a sequence of ATAAA.

139. (Previously Presented) The isolated nucleic acid molecule of claim 71, wherein the fragment has a nucleotide sequence between and including nucleotides 9 and 38 of SEQ ID NO:1.

140. (Cancelled)